

1. An oscillating inner gearing planetary gear system  
comprising:

an internal gear;

5 an external gear which meshes with the internal gear;

an eccentric body which oscillatingly rotates either the  
internal gear or the external gear;

an input shaft;

a middle shaft which has an orthogonal gear, the  
10 orthogonal gear linking the middle shaft to the input shaft at  
a right angle; wherein

either the internal gear or external gear is  
oscillatingly rotated via the input shaft, the orthogonal gear,  
the middle shaft, and the eccentric body.

15 2. The oscillating inner gearing planetary gear system,  
according to claim 1, wherein,

the eccentric body is incorporated into the middle shaft.

3. The oscillating inner gearing planetary gear system,  
according to claim 1, wherein

20 the system further comprises an eccentric shaft having  
the eccentric body, the eccentric shaft being disposed apart  
from the middle shaft.

4. The oscillating inner gearing planetary gear system,  
according to claim 3, wherein

25 the system comprises a plurality of the eccentric shafts,

each of the eccentric shafts has an eccentric shaft drive gear,

the middle shaft has an middle gear, and

the middle gear and all of the eccentric shaft drive

5 gears mesh with one transmitting gear concurrently.

5. The oscillating inner gearing planetary gear system, according to claim 3, wherein

the system comprises a plurality of the eccentric shafts,

each of the eccentric shafts has an eccentric shaft drive

10 gear,

the middle shaft has an transmitting gear, and

all of the eccentric shaft drive gears mesh with the transmitting gear concurrently.

6. The oscillating inner gearing planetary gear system, according to claim 5, wherein

the middle shaft has a hollow structure.

7. The oscillating inner gearing planetary gear system, according to claim 3, wherein

the middle shaft comprises the eccentric body.

20 8. The oscillating inner gearing planetary gear system, according to claim 7, wherein

the eccentric shaft is unlinked with the middle shaft.

9. The oscillating inner gearing planetary gear system, according to claim 7, the gear system further comprising:

25 eccentric shaft drive gears incorporated into the middle

shaft and the eccentric shaft respectively, and

a transmitting gear which meshes with all of the  
eccentric shaft drive gears.

10. The oscillating inner gearing planetary gear system,  
5 according to claim 9, wherein

the transmitting gear has a hollow structure.

11. The oscillating inner gearing planetary gear system,  
according to claim 1,

the middle shaft is located at a position more radially  
10 outward than the internal gear.

12. The oscillating inner gearing planetary gear system,  
according to claim 1, wherein

the system further comprises an output member, and

the middle shaft is located in parallel to the output  
15 member.

13. The oscillating inner gearing planetary gear system,  
according to claim 1, wherein

the eccentric body oscillatingly rotates the internal  
gear, and

20 the external gear is a hollow output shaft.

14. The oscillating inner gearing planetary gear system,  
according to claim 1, wherein

the eccentric body oscillatingly rotates the external  
gear, and

25 an output shaft is a hollow shaft.

15. The oscillating inner gearing planetary gear system,  
according to claim 1, wherein

the external gear is disposed at a radial center of the  
gear system.

5 16. The oscillating inner gearing planetary gear system,  
according to claim 15, wherein

the eccentric shaft having an eccentric body has a hollow  
structure.